

Abstract

Integrated optical waveguides and methods for the production thereof which have a patterned upper cladding with a defined opening to allow at least one side or at least one end of a light transmissive element to be air clad. The at least one side or at least one end is, for preference, a lens structure unitary with the waveguide or a bend. Also provided is a method of fabricating an optical waveguide with a patterned cladding which comprises forming a patterned blocking layer opaque to a predetermined wavelength on a portion of a substrate transparent to the predetermined wavelength; depositing a core layer on said patterned blocking layer and/or on an uncovered portion of the substrate; patterning the core layer from above to provide a light transmissive element; depositing an upper cladding layer, which comprises a material curable by exposure to light of the predetermined wavelength, on the light transmissive element, and/or on the patterned blocking layer and/or on an uncovered portion of the substrate; irradiating said upper cladding layer from below with light of the predetermined wavelength, to cure those portions of said upper cladding layer not positioned above said patterned blocking layer; and removing non-cured portions of said upper cladding layer.